

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application:

1. (Currently Amended) A computer implemented system that facilitates access to industrial data, comprising ~~the following computer executable components:~~

at least one processor that executes computer readable components in an industrial automation environment, the components including:

~~an industrial control processing unit with~~ a mapping component, residing within the industrial automation environment, that generates a database table(s) from one or more user defined data structures associated with an industrial control device(s), the mapping component discovers the one or more user defined data structures and maps elements of the one or more user defined data structures to respective columns of at least one of a row or record of the database table, industrial control device data stored in the database table(s) is accessible through a standard database interface without requirement of proprietary data access software tailored for the industrial device(s), and

an arbiter component that facilitates access between the industrial control devices and computer networks via ~~for~~ an access to the database tables.

2. (Previously Presented) The computer implemented system of claim 1, a standard database connection associated with the standard database interface is a Java DataBase Connectivity (JDBC) connection.

3. (Previously Presented) The computer implemented system of claim 1, the database table is a relational database table.

4. (Canceled)

5. (Previously Presented) The computer implemented system of claim 1, the database table is accessed *via* one or more remote systems that employ disparate operating systems.

6. (Currently Amended) The computer implemented system of claim 1 [[5]], the mapping component is activated at least one of when a request to access the industrial control device's data is received, periodically, based on a time lapse, or based on a polling technique ~~disparate operating systems include one or more of UNIX, HPUX, IBM, AIX, Linux and Microsoft.~~
7. (Currently Amended) The computer implemented system of claim 1, wherein the mapping component maps a single user defined data structure to more than one database table ~~the access includes read and write access.~~
8. (Currently Amended) The computer implemented system of claim 1, wherein the data stored in the database table is transferred between the industrial control device and a remote system as a compact binary file.
9. (Currently Amended) The computer implemented system of claim 1, wherein the mapping component maps each of the one or more user defined data structures to a respective row of the database table ~~the interface component facilitates discovery of industrial device data and the database table.~~
10. (Currently Amended) A computer implemented industrial control device comprising:
at least one processor that executes the following computer executable components stored on at least one computer readable medium:
 an interface component that facilitates at least one of reading from or and-writing to one or more relational database tables stored within the industrial control device, without requirement of platform specific software tailored for the an industrial control device(s) controlled by the industrial control device; and
 a mapping component that discovers one or more user defined data structures utilized by the industrial control device and maps at least one element of the one or more user defined data structures associated with the industrial control device to at least one respective column of a row or record in the one or more relational database tables; the mapping component populates the one or more relational database tables with data from the one or more user defined data structures ~~the mapping component part of an industrial processing unit and~~

~~an intelligence component that employs classifiers to determine when, how and which data structures should be transformed to corresponding database tables.~~

11. (Currently Amended) The computer implemented industrial control device of claim 10, the mapping component is executed within at least one of a module of the industrial control device, a host computer, or and the interface component, without user intervention.

12. (Currently Amended) The computer implemented industrial control device of claim 10, the mapping component is executed without knowledge of industrial control device data layout.

13. (Currently Amended) The computer implemented industrial control device of claim 10, the one or more relational database tables are concurrently accessed for at least one of transaction commitment, transaction rollback or and transaction termination.

14. (Currently Amended) The computer implemented industrial control device of claim 10, the standard database connection is employed to establish a connection with the interface component by a remote device.

15. (Previously Presented) The computer implemented industrial control device of claim 14, the standard database connection is an SQL-compliant connection.

16. (Previously Presented) The computer implemented industrial control device of claim 14, the standard database connection is a Java DataBase Connectivity (JDBC) connection.

17. (Currently Amended) The computer implemented industrial control device of claim 16 ~~further comprise~~ wherein the JDBC connection utilizes ~~utilizing~~ a JDBC Open or Select command(~~s~~) to read data from the one or more relational database tables and a JDBC Post command(~~s~~) to write data to the one or more relational database tables.

18. (Currently Amended) The computer implemented industrial control device of claim 10 further comprises an intelligence component that facilitates mapping, reading and writing the

industrial control device data by employing one or more machine learning techniques, the intelligence component determines at least one of when, how or which data structures associated with the industrial control device are transformed to the one or more relational database tables, by employing at least one classifier.

19-22. (Canceled)

23. (Currently Amended) A computer implemented method of accessing industrial device data, comprising:

employing at least one processor that executes computer executable instructions in an industrial environment to perform the following acts:

discovering one or more user defined data structures utilized by an industrial control device;

mapping each element of the one or more user defined data structures to a respective column of at least one of a row or record of a database table;

populating the ~~generating a~~ database table(s) with data from the industrial control device stored in the one or more user defined data structures ~~data-via~~ a processing module;

~~establishing a connection with the industrial device via an SQL-compliant database connection;~~

~~discovering relational database tables stored within the industrial device via an intelligence component; and~~

enabling access to ~~accessing~~ the data within the ~~relational~~ database tables, without platform specific data access software associated with the industrial control device(s).

24. (Currently Amended) The computer implemented method of claim 23, further comprising facilitating a connection with the industrial control device by employing a ~~the~~ SQL-compliant database connection is a Java DataBase Connectivity (JDBC) connection.

25. (Currently Amended) The computer implemented method of claim 23, wherein the enabling access includes enabling at least ~~accessing data includes~~ one of committing a transaction, rolling back a transaction or ~~and~~ aborting a transaction.

26. (Canceled)

27. (Currently Amended) The computer implemented method of claim 23 further comprises transferring data from the database table to a remote entity in one or more ~~as~~ compact binary packets.

28. (Currently Amended) The computer implemented method of claim 23 further comprises enabling concurrently accessing to two or more ~~than one of the relational~~ databases tables.

29. (Currently Amended) An industrial control processing system comprising:
at least one computer readable storage medium storing computer executable instructions
that when executed by the at least one processor implement components comprising:
 means for opening a database connection with the industrial control device;
 means for discovering at least one user defined data structure utilized by an
industrial control device and mapping each element of the at least one user defined data structure
to a respective column of at least one of a row or record of at least one database table, the at least
one database table mapped with ~~means for mapping~~ data from the at least one data structure ~~to at~~
~~least one database table by employing an intelligence component with classifiers that determines~~
~~when, how and which computer readable data structure should be transformed to corresponding~~
~~database tables;~~
 ~~means for discovering the at least one database table; and~~
 means for transferring data between the industrial control device and a remote
entity as compact binary information via the at least one ~~retrieving suitable protocols and~~
~~configuration and accessing the discovered database tables.~~